

**FAVARTIA BREVICULA (SOWERBY, 1834) AND TWO NEW SPECIES
OF FAVARTIA FROM THE WESTERN PACIFIC
(GASTROPODA: MURICIDAE)**

Anthony D'Attilio and Barbara W. Myers

Department of Marine Invertebrates
San Diego Natural History Museum
San Diego, CA 92112

ABSTRACT

Murex breviculus Sowerby, 1834, is reexamined and a lectotype is selected from the syntypic lot. *Murex tetragonus* Broderip, 1833, is discussed and it is our conclusion the name is a nomen dubium. Two new species of *Favartia* Jousseaume, 1880, are described, one from the Solomons one from the Philippines.

The identity of *Murex breviculus* Sowerby, 1834, has never been in doubt and the figure in the *Conchological Illustrations* (Sowerby, 1834, pl. 63, fig. 37) clearly defines the species. The illustration agrees with the brief but adequate description published later in the *Proceedings of the Zoological Society of London* (1841:146-147). The syntypic lot consisting of three specimens was borrowed from the British Museum. A lectotype was selected and the two remaining specimens are considered paralectotypes. For purposes of clarity all three specimens from the type lot are illustrated herein through the courtesy of the Trustees of the British Museum (Natural History).

The identity of *Murex tetragonus* Broderip, 1833, on the other hand has never been established. Broderip's description in the *Proceedings of the Zoological Society of London* for 1832, was based on a single "very much waterworn" specimen. Broderip did not figure this species, but Sowerby (1834) figured *M. tetragonus* in the *Conchological Illustrations* (pl. 61, fig. 25 and pl. 63, fig. 36). We were informed by Ms. Kathie Way of the Molluscan Section, British Museum, that they were unable to locate any type material of *M. tetragonus* Broderip.

Institutional abbreviations used in this paper are: ANSP = Academy of Natural Sciences Philadelphia. BM(NH) = British Museum Natural History. SDNHM = San Diego Natural History Museum.

***Favartia* Jousseaume, 1880**

Type Species: *Favartia brevicula* (Sowerby, 1834)
by original designation

***Favartia brevicula* (Sowerby, 1834)**

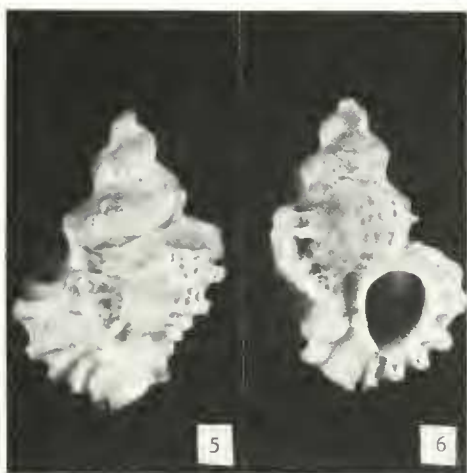
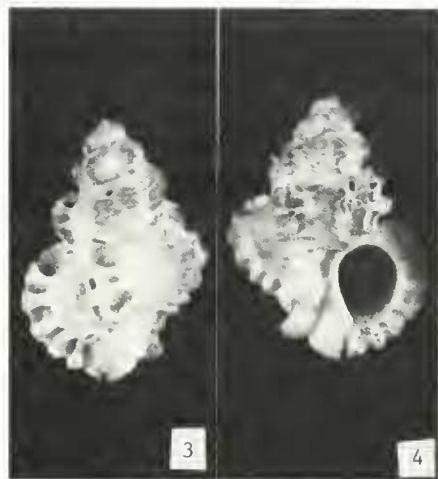
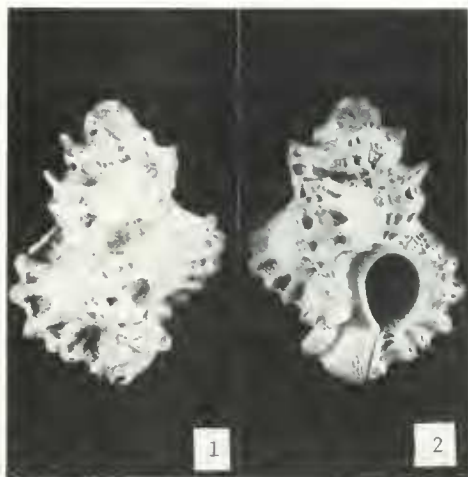
Murex breviculus Sowerby, 1834: *Conch. Ill. Pl.* 63, fig. 37
Figs. 1-8, 13

The syntypic lot of *Favartia brevicula* (Sowerby, 1834) borrowed from the British Museum (NH) consisted of three beach eroded specimens reg. #1974088.

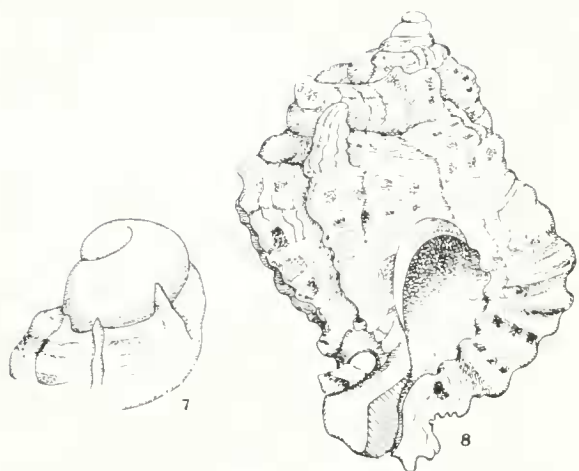
The lectotype, measuring 26 mm × 20 mm, was selected because it had the least amount of erosion. Shell is broadly biconic, the number of whorls indeterminate because of the erosion of the spire. Whorls convex, aperture subcircular, smooth within, inner lip erect, outer lip crenulate, reflecting external cords, anal sulcus not apparent, canal narrowly open, broad, moderate in length, terminally sharply recurved; three older canal terminations on fasciole; four broad varices crossing shoulder and abutting whorl above; narrow intervarical areas appear smooth on lectotype; leading edge of varices reaching midway in the intervarical area; varices deeply cut and depressed on both leading and receding side; where varix crosses the shoulder it is bladelike and strongly recurved; the leading side of the varix with longitudinal lamellae undulating between the spiral cords; five thick spiral cords on body whorl, obsolete in narrow intervarical areas, the first three about equal size, the two anterior ones small and grouped as a pair. Two minor cords on the canal separated by a gap from the body cords at the base of the body whorl. Color of types is dull-white.

Muricidae Rafinesque, 1815

Muricopsinae Radwin and D'Attilio, 1971



FIGS. 1-6. *Favartia brevicula* (Sowerby, 1834). 1, Dorsal and 2, apertural views of lectotype BM(NH) #1974088 (26.0 × 20.0 mm.); 3 and 4, paralectotype BM(NH) #1974088 (23.75 × 17.0 mm.); 5 and 6, paralectotype BM(NH) #1974088 (26.75 × 20.0 mm.).



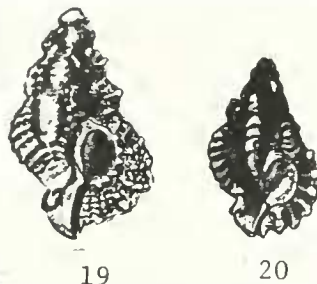
FIGS. 7 and 8. *Favartia brevicula* (Sowerby, 1834) SDNHM 76669 small specimen from Bohol Straits, Philippine Islands. 7, protoconch; 8, general shell morphology (11.0 mm × 7.4 mm.).

Type Locality—Unknown. The species is found throughout the western and south Pacific to east Africa.

Dimensions—

	Length	Width
BM(NH) #1974088 - Lectotype	26.0 mm	20.0 mm
BM(NH) #1974088 - Paralectotype	23.75 mm	17.0 mm
BM(NH) #1974088 - Paralectotype	26.75 mm	20.0 mm

Discussion—Sowerby (1879) in the *Thesaurus Conchyliorum* appeared to change the description of *F. brevicula*. Instead of having four varices as described in the original description, he stated there were five varices for *F. brevicula*. Although the three syntypes for *F. brevicula* have only four varices and in most of the specimens examined there were only four varices, among the material at our disposal, we found nine specimens with five varices from dif-



FIGS. 19 and 20. *F. tetragona* Broderip, 1833, taken from Sowerby (1834). 19, from pl. 61, fig. 25; 20, from pl. 63, fig. 36.

ferent localities and ranging in size from 11.5 mm to 23.0 mm. The number of varices appears to be a variable character.

***Favartia tetragona* (Broderip, 1833)**

Murex tetragonus Broderip, 1833: Proc. Comm. Sci.

Corresp. Zool. Soc. London, 174.

Figs. 19, 20

The single specimen available to Broderip was in poor condition and the only one he ever saw. It was never figured by Broderip and the description is not definitive. The original description is as follows:

MUREX TETRAGONUS. *Mur. testa pyramidalis, albidâ, quadrifariam varicosâ, transversim costata, subconcellatâ; apertura violaceâ, prominente; labii limbo unduloso-crenulato; canali brevi, recurvâ: long. 1½, lat. ½ poll.*

Hob.?

Mus Sowerby

This specimen, the only one I ever saw, is very much water-worn, but the leading characters of the species are uninjured — W. J. L.

According to Broderip the habitat was unknown. The specimen was deposited in Museum Sowerby and its whereabouts today is unknown. The illustrations by Sowerby in 1834 (Pl. 63, fig. 36 and Pl. 61, fig. 25) do not show a waterworn shell as described by Broderip, but do show a very pyramidal-shaped shell, with a broad base and flaring lip. Figs. 19 and 20 are copied from Sowerby (1834).

Lacking typological material the morphology of this taxon must rely entirely on Broderip's description and the figure by Sowerby. Reeve (1845: Pl. 26, fig. 18) figured the broad coarse shell of *Murex breviculus* Sowerby placing *M. breviculus* in the synonymy of *M. tetragonus*, the earlier name, stating he could not discover "any specific differences between *Murex tetragonus* and *breviculus*". Sowerby who did the illustrations for the *Conchologia Iconica* did not dispute the synonymy. However, in 1879, in the *Thesaurus Conchyliorum*, Sowerby included both binomens (*Murex tetragonus* sp. 187, fig. 228 and *M. breviculus* sp. 188, fig. 229), and in comparing the two species stated at that time that *M. breviculus* was a shorter and thicker shell than *M. tetragonus* and had five varices. This differed from *M. tetragonus* which was described as having four varices. In 1879 Sowerby also stated for *M. tetragonus* that the latticed varices follow from whorl to whorl so confluent

as to form four oblique walls up the spire and he stated for *M. breviculus* "ad spiram interruptis".

The identification of *M. tetragonus* has never been established. As stated above Reeve (1845) synonymized *M. breviculus* with *M. tetragonus*, the earlier name. Tryon (1880: pl. 36, fig. 424, 425) agreed with Reeve, figuring both the broad heavy shell of *M. breviculus* and what looks like a copy of Sowerby's figure of *M. tetragonus*, both under the name of *M. tetragonus*.

In recent works the following authors figured what they believed to be *F. tetragona* as follows:

Smith, M. (1939: pl. 6, fig. 2) figured *F. brevicula*.

Cernohorsky (1967: pl. 15, fig. 20) figured an undetermined species.

Fair (1976: pl. 20, fig. 295) figured an undetermined species.

Radwin and D'Attilio (1976) mistakenly described *F. tetragona* as having three varices and figured it on pl. 14, fig. 3. This is the new species described here as *F. trivariosa* and shown also in text fig. 96 of Radwin and D'Attilio.

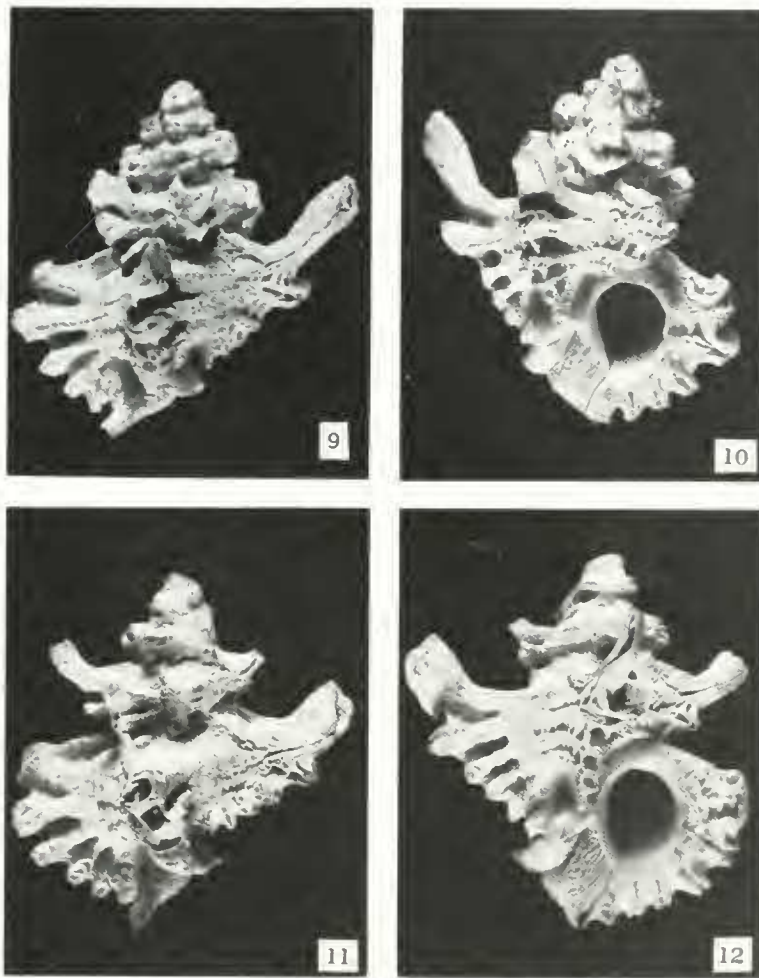
Inasmuch as there is apparently no type extant for *F. tetragona*, the identity of the species has not been established in 150 years. We have not been able to associate Sowerby's figure with any species of *Favartia* known to us and we believe this species is of dubious merit, therefore we are placing it among the doubtful names. It is interesting to note that no authors, to date, have mentioned Broderip's description of the aperture being prominently violet.

***Favartia robertsoni* new species**

Figs. 9-12, 14, 15, 16

Shell medium size, broadly fusoid, spire moderately high, anterior truncate, approximately five whorls, early whorls eroded; protoconch not determined; weakly shouldered, somewhat tabulate; shoulder area between the varices depressed and concave, especially on receding side of the varix; suture impressed; body whorl broader than high; aperture subovate; peristome erect; outer lip undulate, reflecting external transverse cords; canal broad, very narrowly open, short, terminally tube-like, bent backward nearly at right angle; siphonal fasciole retaining two older canal terminations.

Varices thick, four per whorl; intervarical



FIGS. 9-12. 9, 10, *Favartia robertsoni* n. sp. holotype SDNHM 86944 (26.0 × 26.5 mm.). 11 and 12, paratype D in the Donald Pisor collection (26.6 × 27.2 mm.).

areas with moderately raised cords; varices extending over shoulder obliquely to left and terminating at suture.

Spiral sculpture as follows: one broad cord at the shoulder prolonged prominently into a blunt spine, the margin nearly closed on the leading side; a similar broad cord below extending beyond the varix, but not prolonged into a spine, up to the penultimate varix. On the mature apertural varix these two cords do not project beyond the remaining sculpture of the varix. Four secondary cords on the body whorl diminishing in size anteriorly; varix deeply excavated between the cords on receding side; cords on body whorl more or less weakly raised; three minor cords on shoulder obsolete except near

apertural varix. Leading side of varices recurved and with scabrous lamellae producing a surface with squarish pits; weak scabrous lamellae on surface of spiral cords between varices.

Color: Creamy white entirely except for the holotype with is a dead collected shell lightly stained with rust.

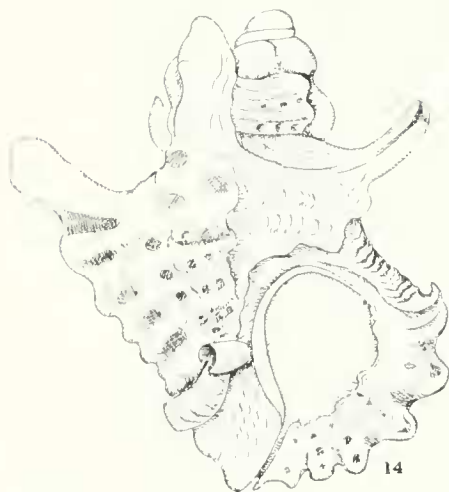
Type Locality—Malaita Island, Solomon Islands.

Dimensions—

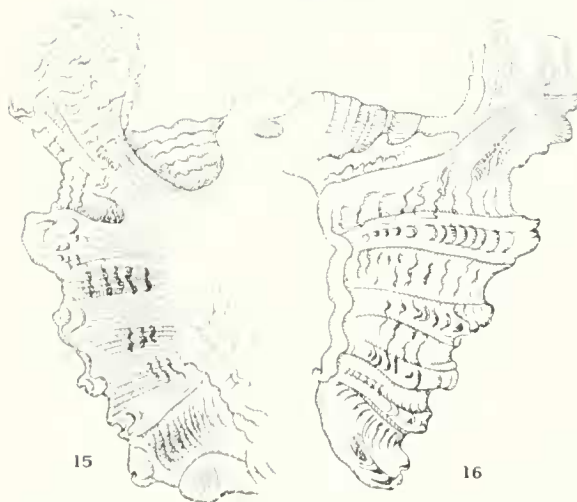
	Length	Width
Holotype SDNHM 86944		
Ataa, Malaita Island, Solomon Is.	26.0	26.5 mm
Paratype A, SDNHM 86942		
Marau Sound, Guadalcanal, Solomon Is.	17.0	15.9
Paratype B, ANSP 289568		
Malaita Island, Solomon Islands	20.5	20.2



13



14



15

16

FIGS. 13-16. 13, Outline drawing of *Favartia brevicula* (Sowerby, 1834) SDNHM 78704 (19.6 × 15.2 mm.). FIGS. 14-16, *Favartia robertsoni* D'Attilio and Myers. 14, paratype B ANSP 289568 (20.5 × 20.2 mm.); 15, paratype C ANSP 289568 showing microsculpture of receding side of varix; 16, leading side of varix.

Paratype C, ANSP 289568

Malaita Island, Solomon Islands 11.4 14.1

Paratype D, Donald Pisor collection.

Malaita Island, Solomon Islands 26.6 27.2

Paratype E, Glass and Foster collection

Marau Sound, Guadalcanal, Solomon Is 24.5 17.5

Etymology—This species is named for Dr. Robert Robertson, Curator and holder of the Pilsbry Chair of Malacology, Academy of Natural Sciences Philadelphia, whose malacological insight the senior author has long admired.

Discussion—The varices appear the same except when fully mature; it is only at maturity that the final varix shows its character as in the above description. Comparison is made with its nearest congener, *F. brevicula* (Sowerby, 1834), which has a thicker, coarser shell with a broader more obese body whorl and larger aperture. *F. brevicula* lacks the extended long heavy spine on the varices previous to the mature apertural varix. It also has no noticeable keel on the shoulder and has five equal cords on the body whorl in contrast to the two major cords and four secondary cords of *F. robertsoni*.

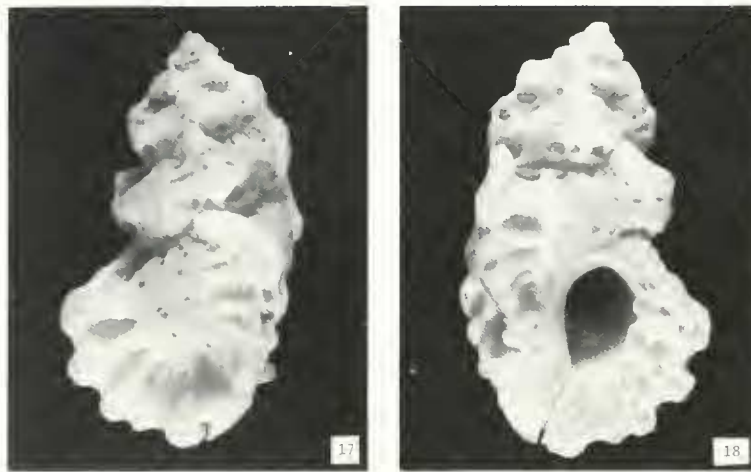
F. robertsoni new species was figured in Radwin and D'Attilio (1976) pl. 23, fig. 11 and pl. 24, fig. 2 as *F. brevicula* (Sowerby, 1834).

Favartia trivari-cosa new species

Figs. 17, 18

Shell small fusoid, spire high, anterior truncate, approximately seven whorls; protoconch eroded, not determined; suture impressed. Aperture ovate, peristome erect anteriorly, but appressed posteriorly on the inner side; outer lip crenulate reflecting external transverse cords, canal short very narrowly open, terminally tube-like and bent backward nearly at right angle, siphonal fasciole retaining one older canal termination.

Varices moderately thick, three per whorl on the final and penultimate whorl, four on the earlier whorls; varices extending over shoulder and terminating at suture. Intervarical areas with axial sculpture in the form of low, flat, thickened lamellae. Spiral sculpture as follows: one cord above the shoulder and four broad cords on the body whorl. Leading side of the varices recurved and with scabrous lamellae, deeply excavated between the cords on the receding side. A combination of the axial



FIGS. 17 and 18. *Favartia trivaricosa* n. sp. holotype SDNHM 86943 (15.0 × 9.4 mm.).

lamellae crossed by these spiral cords results in square pits in the intervarical areas. When worn only the pits are visible.

Color: Dull-white varices with very pale-tan intervarical areas; aperture pale lavender.

Type Locality—Bohol Straits, Philippine Islands.

Dimensions—

	Length mm.	Width mm.
Holotype SDNHM 86943 Bohol Straits, P. I. (ex Foster and Glass)	15.0	9.4
Paratype A, SDNHM 82094 Cebu Island, P. I.	13.5	9.4
Paratype B, SDNHM 73702 Bohol Straits, P. I.	13.0	9.5
Paratype C, SDNHM 76668 Mactan Island, P. I.	12.0	6.6
Paratype D, SDNHM 82276 Mactan Island, P. I.	14.3	9.7
Paratype E, Glass and Foster collection, P. I.	13.0	8.7

Other Material Examined—One specimen in the June King collection from Bohol Straits, P. I. (11.0 × 6.0 mm.); one specimen in the Rose D'Attilio collection from Wading Island, Fiji Islands (18.3 × 11.4 mm).

Discussion—Comparison is made with the following species of *Favartia*:

F. alveata (Kiener, 1842) from the West Indies which has five to seven varices instead of three as does *F. trivaricosa*, and spiral cords ornamented with scales appressed to their surface.

F. brevicula (Sowerby, 1834) which is a broad heavy larger shell with four or five broad sculptured varices and smooth intervarical areas.

F. cyclostoma (Sowerby, 1841) which is a large shell with five varices.

F. minatauros Radwin and D'Attilio, 1976 from Mauritius which has an obtuse spire and a swollen body whorl.

F. munda (Reeve, 1849) from Japan which has four to five varices.

F. trivaricosa new species was mistakenly figured in Radwin and D'Attilio (1976) pl. 14, fig. 3 and text fig. 96 as *F. tetragona* (Broderip, 1833).

Etymology—This new species is named for the three varices on the body whorl which distinguish it from several of its congeners. Latin *tri* (three) plus *varicosa* (varices).

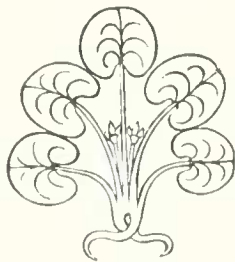
Acknowledgments

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